

**PATENT COOPERATION TREATY**  
**PCT**  
**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FP1911	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. <b>PCT/SG2003/000284</b>	International Filing Date (day/month/year) 12 December 2003	Priority Date (day/month/year) 12 December 2003
International Patent Classification (IPC) or national classification and IPC Int. Cl. <sup>7</sup> G06T 7/60, G06K 9/46		
Applicant AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.	
2. This REPORT consists of a total of 3 sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of sheet(s).	
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application	

Date of submission of the demand 4 May 2005	Date of completion of the report 24 August 2005
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  <b>J.W. THOMSON</b> Telephone No. (02) 6283 2214

**I. Basis of the report****1. With regard to the elements of the international application:\***

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of
- ☐ the claims, pages , as originally filed,  
pages , as amended (together with any statement) under Article 19,  
pages , filed with the demand,  
pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,  
pages , filed with the demand,  
pages , received on with the letter of
- ☐ the sequence listing part of the description:  
pages , as originally filed  
pages , filed with the demand  
pages , received on with the letter of

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:**

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

**4. ☐ The amendments have resulted in the cancellation of:**

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

**5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 1-30	YES
	Claims	NO
Inventive step (IS)	Claims 1-30	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-30	YES
	Claims	NO

**2. Citations and explanations (Rule 70.7)**

The following documents cited in the International Search Report were considered:

- US 6430430 B (Gosche), 6 August 2002
- Chunlin, Li et al., *Knowledge-Based Classification and Tissue Labelling of MR Images of Human Brain*, Medical Imaging, IEEE Transactions, December 1993, Vol. 12, No. 4 pp 740-749
- WO 2000/065985 A (University of South Florida), 9 November 2000
- JP 2001092980 a (NEC), 6 April 2001
- Clarc MC et al., Automatic Tumor Segmentation using Knowledge-Based Techniques, Medical Imaging, IEEE transactions, April 1998, Vol. 17, Issue 2, ISSN:0278-0062 pp 187-200

However, these documents merely define the general state of the art and are not considered to be of particular relevance.

The following new citation is relevant:

- Hu & Nowinski, *A Rapid Algorithm for Robust and Automatic Extraction of the Midsagittal Plane of the Human Cerebrum from Neuroimages Based on Local Symmetry and Outlier Removal*, NeuroImage, December 2003, Volume 20, Issue 4, pp 2153-2165.

**1. Novelty and Inventive Step**

- Whilst the document cited above discloses a method of determining the location of the midsagittal plane of the human cerebrum as recited in step a) of claim 1, it does not disclose or suggest calculating a ratio of outliers to the inliers as recited in step b); or the comparing of that ratio with a threshold as recited in step c).

Therefore the invention defined in claims 1-30 is both novel and inventive over the cited prior art.